

Applicants hereby submit a Terminal Disclaimer to overcome this rejection. The Terminal Disclaimer disclaims a portion of the patent term extending beyond the patent term of U.S. Patent No. 6,277,205 to Nagamura et al. which was commonly owned at the time of filing of the present invention. However, the submission of the Terminal Disclaimer is not intended as an admission that the claims of the '205 patent applied by the Examiner are substantively sufficient to support the Examiner's rejection. Applicants do not waive any right to take alternative action in the future and note that the filing of the present Terminal Disclaimer does not constitute an admission that the rejected claims would have been obvious over respective claims in the '205 patent. As emphasized in *Quad Environmental Technologies Corp. v. Union Sanitary District*, 20 USPQ2D 1392, 1394 (Fed. Cir. 1991), "the filing of a terminal disclaimer simply serves the statutory function of removing the rejection of double patenting, and raises neither presumption nor estoppel on the merits of the rejection". Withdrawal is requested.

THE 35 U.S.C. § 102 REJECTIONS

Claims 1-7 and 15 are again being rejected under 35 U.S.C. § 102(e) as being anticipated **Nagamura et al.** (U.S. Patent No. 6,277,205) or under 35 U.S.C. § 102(a)/(e) by a divisional to **Nagamura et al.** (U.S. Patent No. 6,071,376).

Claim 1 presently recites a method of washing a photomask comprising first to third steps of: removing organic matter and metal impurities present on the surface of a photomask; removing foreign matter adhering to said surface of said photomask with H₂ gas dissolved water; and drying said photomask, wherein said photomask is a phase-shift mask including halftone mask, said H₂ gas dissolved water contains ammonia and the concentration of said ammonia is not more than 1%.

Neither **Nagamura et al.** '376 nor '205 teach a method of washing a photomask comprising *first to third steps of*:

Step 1. removing organic matter and metal impurities present on the surface of a photomask;

Step 2. removing foreign matter adhering to said surface of said photomask with H₂ gas dissolved water; and

Step 3. drying said photomask.

This sequence is illustrated by Fig 6 of the instant invention, which shows

Step 1. Sulfuric acid/aqueous hydrogen peroxide treatment to remove organic matters;

Step 2. Treatment with H₂ gas dissolved water added with ammonia to remove sulfuric acid and foreign matter; and

Step 3. Drying.

The recited sequence of steps cannot simply be ignored. *In re Freed*, 425 F.2d 785, 165 USPQ 570 (CCPA 1970). The claim expressly recites a method of washing a photomask "*comprising first to third steps of*" removing organic matter, removing foreign matter, and drying. This recited sequence of steps cannot simply be ignored. Although the term comprising is open ended and does not exclude additional steps preceding or subsequent to the recited first through third steps, any prior art which is alleged to anticipate the claims must recite the same steps in the same order.

The cleaning method of **Nagamura et al.** provides, as shown in Fig. 7 therein, a method of washing a photomask comprising:

Step 1. Sulfuric acid/hydrogen peroxide treatment to remove organic matters (see, e.g., col. 11, lines 28-34);

Step 2. Treatment with anodic water to remove residual cleaning fluid such as sulfuric acid and sulfate ions (see, e.g., col. 11, lines 35-45);

Step 3. Treatment with cathodic water added with ammonia to remove foreign matter (see, e.g., col. 12, lines 1-6);

Step 4. Drying (see, e.g., col. 12, lines 18-19)

As argued by the Examiner, "[t]he cleaning method of Nagamura comprises the following steps in recited order: a step of cleaning the surface of a photomask in order to decompose organic objects present thereon and remove metallic impurities, which is identical to step 1 of the instant claim 1". However, the Examiner is impermissibly collapsing two steps recited in **Nagamura et al.** into a single step taught by the present disclosure. Whereas **Nagamura et al.** teach treatment with anodic water to remove residual cleaning fluid such as sulfuric acid and sulfate ions (step 2) and treatment with cathodic water added with ammonia to remove foreign matter (step 3), the present claim recites a single step of treatment with H₂ gas dissolved water which, as disclosed, removes **both** sulfuric acid and foreign matter (see, e.g., Fig. 6; page 12, lines 6-8, *stating* "In a step 2, the photomask is subjected to washing for removing sulfuric acid remaining on the surface of the photomask and foreign matter adhering thereto"). The claimed procedure is in contrast to prior art methods which included a washing step (e.g., Step 2 of **Nagamura et al.**) for the reasons noted on, for example, page 1, line 31 to page 3, line 4 and page 12, lines 22-31 of Applicant's disclosure.

Under the law of anticipation, "[f]or a prior art reference to anticipate in terms of 35 U.S.C. § 102, every element of the claimed invention must be identically shown in a single reference. See, *e.g.*, *Diversitech Corp. v. Century Steps, Inc.* 7 USPQ2d 1315, 1317 (Fed. Cir. 1988) (emphasis added); *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989) (holding "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim."). For at

least the above-noted reasons, it is submitted that **Nagamura et al.** has not been shown to anticipate claims 1-7 and 15 under the stated grounds. Withdrawal is requested.

THE 35 U.S.C. § 103 REJECTION

Claims 1-7 are again being rejected under 35 U.S.C. § 103(a) as being unpatentable over Yeol et al. (U.S. Patent No. 6,039,815).

Yeol et al. are cited as teaching a cleaning apparatus for semiconductor processing comprising the steps of dissolving an ozone gas and a hydrogen gas in water to produce ozone water and hydrogen water, the ozone water being mixed with an acidic solution to form an oxidizing acidic cleaning solution and the hydrogen water being mixed with an alkaline solution to produce an alkaline cleaning solution. Cleaning is performed first with the oxidizing acidic cleaning solution and subsequently with the alkaline cleaning solution (citing col. 2, lines 43-67; col. 3, lines 1-10 and 40-50). After cleaning, the substrate is dried (citing col. 9, lines 58-62).

The Examiner alleges that the above teaching "reads on the three step cleaning process, as instantly claimed".

Yeol et al. have not been shown to teach or suggest, and fails to teach or suggest, the recited step of removing foreign matter adhering to a surface of the photomask with H₂ gas dissolved water, the H₂ gas dissolved water containing ammonia, a concentration of which is not more than 1%.

Accordingly, reconsideration and withdrawal of this 35 U.S.C. § 103 rejection is requested on at least the grounds that (1) **Yeol et al.** fail to teach or suggest each and every element of the claimed invention and fails to render the claimed invention obvious under 35 U.S.C. § 103 and (2) the Examiner has failed to discharge the evidentiary burden required to establish a *prima facie* case of obviousness under 35 U.S.C. § 103.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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